

3. (Withdrawn) The isolated nucleic acid molecule of claim 1, wherein the encoded proteinaceous molecule or biological equivalent comprises a CS1 receptor.
4. (Withdrawn) The isolated nucleic acid molecule of claim 1, wherein the encoded proteinaceous molecule or biological equivalent comprises an amino acid sequence or partial sequence of SEQ ID NO 2.
5. (Withdrawn) The isolated nucleic acid molecule of claim 1, wherein the encoded proteinaceous molecule or biological equivalent has seven putative N-linked glycosylation sites.
6. (Withdrawn) The isolated nucleic acid molecule of claim 1, wherein the encoded proteinaceous molecule or biological equivalent has two tyrosine motifs.
7. (Withdrawn) The proteinaceous molecule or biological equivalent of claim 6, wherein a formula for the tyrosine motif comprises:  
  
(-T-x-Y-x-x-I/V/A-), wherein the formula for the tyrosine motif represents a D-or L-isomer of ("x") equals any amino acid; ("Y") equals a tyrosine amino acid; ("T") equals a tryptophan amino acid, ("A") equals an alanine amino acid, ("V") equals a valine amino acid, ("I") equals an isoleucine amino acid.
8. (Withdrawn) An isolated proteinaceous molecule or biological equivalent comprising a synthetic or recombinant polypeptide of a cell surface receptor that is homologous to a subset of a CD2 family of receptors with a predicted length of about 335 amino acids; a predicted intracellular domain of about 85 amino acid residues; a predicted extracellular domain of about 225 amino acid residues; and a predicted single transmembrane domain of about 25 amino acid residues.
9. (Withdrawn) The isolated proteinaceous molecule or biological equivalent of claim 8, wherein the proteinaceous molecule or biological equivalent comprises a peptide sequence of SEQ ID NO. 2.
10. (Withdrawn) The isolated proteinaceous molecule or biological equivalent of claim 8, wherein the subset of the CD2 family of receptors comprises a CS1 receptor or its biological equivalent.

11. (Withdrawn) The isolated proteinaceous molecule or biological equivalent of claim 8, wherein the encoded proteinaceous molecule or biological equivalent has seven putative N-linked glycosylation sites.

12. (Withdrawn) The isolated proteinaceous molecule or biological equivalent of claim 8, wherein the encoded proteinaceous molecule or biological equivalent has two tyrosine motifs.

13. (Withdrawn) The isolated proteinaceous molecule or biological equivalent of claim 12, wherein a formula for the tyrosine motif comprises:

(-T-x-Y-x-x-I/V/A-), wherein the formula for the tyrosine motif represents a D-or L-isomer of ("x") equals any amino acid; ("Y") equals a tyrosine amino acid; ("T") equals a tryptophan amino acid, ("A") equals an alanine amino acid, ("V") equals a valine amino acid, ("I") equals an isoleucine amino acid.

14. (Twice Amended) A monoclonal antibody produced by:

(a) injecting an animal with a proteinaceous molecule to produce an immunized animal, wherein the proteinaceous molecule is (SEQID No.: 3), (SEQID No.: 4), or (SEQID No.: 5);

(b) harvesting spleen cells from the immunized animal to give harvested spleen cells;

(c) fusing the harvested spleen cells with an immortal cell line to produce a fusion cell line;

(d) screening the fusion cell line to identify cells that specifically produce a monoclonal antibody with affinity toward (SEQID No.: 3), (SEQID No.: 4), or (SEQID No.: 5) the proteinaceous molecule having sequence homology to the specific portion the natural killer cell surface receptor; and

(e) selecting and expanding the fusion cell line only with cells that specifically produce the monoclonal antibody.

wherein, the proteinaceous molecule further comprises a synthetic proteinaceous molecule, or a recombinant proteinaceous molecule having a peptide sequence:

CONRNRERVDFP (SEQID#3);

CMEHGEEDEVY (SEQID#4);

CQEEYEKKRVDICRE (SEQID#5); or combination thereof.

15. (Original) The monoclonal antibody of claim 14, wherein the immunized animal comprises a mouse.
16. (Original) The monoclonal antibody of claim 14, wherein the immortal cell line comprises a myeloma.
17. (Canceled)
18. (Canceled)
19. (Canceled)
20. (Twice Amended) The monoclonal antibody of claim 14, wherein (SEQID No.: 3), (SEQID No.: 4), or (SEQIDNo.:5) ~~the proteinaceous molecule~~ is linked to an immunological adjuvant.
21. (Twice Amended) The monoclonal antibody of claim 14, wherein the (SEQID No.: 3), (SEQID No.: 4), or (SEQIDNo.:5) ~~further proteinaceous molecule~~ comprises a fusion protein.
22. (Twice Amended) The monoclonal antibody of claim 21, wherein the fusion protein comprises (SEQID No.: 3), (SEQID No.: 4), or (SEQID No.: 5) fused to a Glutathione S Transferase ("GST") protein.
23. (Canceled)
24. (Canceled)

25. (Twice Amended) A fusion cell line produced by:

(a) injecting an animal with a proteinaceous molecule to produce an immunized animal, wherein the proteinaceous molecule is (SEQID No.: 3), (SEQID No.: 4), or (SEQID No.: 5);

(b) harvesting spleen cells from the immunized animal to give harvested spleen cells;

(c) fusing the harvested spleen cells with an immortal cell line to produce a fusion cell line;

(d) screening the fusion cell line to identify cells that specifically produce a monoclonal antibody with affinity toward (SEQID No.: 3), (SEQID No.: 4) or (SEQID No.: 5); ~~the proteinaceous molecule having sequence homology to the specific portion the natural killer cell surface receptor;~~ and

(e) selecting and expanding the fusion cell line only with cells that specifically produce the monoclonal antibody,

~~wherein, the proteinaceous molecule further comprises a synthetic proteinaceous molecule, or a recombinant proteinaceous molecule having a peptide sequence:~~

~~CQNRNRERVDFF (SEQID#3);~~

~~CMEHGEEDEVITY (SEQID#4);~~

~~CQEEYEEKKRVDICRE (SEQID#5); or combination thereof.~~

26. (Original) The fusion cell line of claim 25, wherein the immunized animal comprises a mouse.

27. (Original) The fusion cell line of claim 25, wherein the immortal cell line comprises a myeloma.

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Twice Amended) The fusion cell line of claim 25, wherein the (SEQID No.: 3), (SEQID No.: 4), or (SEQID No.: 5) proteinaceous molecule is linked to an immunological adjuvant.

32. (Twice Amended) The fusion cell line of claim 25, wherein the (SEQID No.: 3), (SEQID No.: 4), or (SEQID No.: 5) further proteinaceous molecule comprises a fusion protein.

33. (Twice Amended) The fusion cell line of claim 32, wherein the fusion protein comprises (SEQID No.: 3), (SEQID No.: 4), or (SEQID No.: 5) fused to a Glutathione S Transferase ("GST") protein.

34. (Canceled)

35. (Canceled)

36. (Withdrawn) A method to inhibit the growth of tumor cells comprising the steps of: contacting an effective amount of the monoclonal antibody of claim 14 with the natural killer cells, which leads to the activation of the natural killer cell, and inhibition of tumor cell growth.

37. (Withdrawn) The method of claim 36, wherein the monoclonal antibody comprises a CS1 proteinaceous molecule acting as a ligand for a CS1 receptor on natural killer cells, which leads to the activation of the natural killer cell, and inhibition of tumor cell growth.

38. (Amended) A purified monoclonal antibody that specifically binds to ~~SEQID#3, or SEQID#4, or SEQID#5~~ SEQID No.: 3, SEQID No.: 4, or SEQID No.: 5.

39. (Amended) A fusion cell line that produces a monoclonal antibody that specifically binds to ~~SEQID#3, or SEQID#4, or SEQID#5~~ SEQID No.: 3, SEQID No.: 4, or SEQID No.: 5.